

Application Number 10/693,011
Amendment Responsive to the Office Action mailed May 9 2008

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Previously Presented): A programmer for an implantable medical device, the programmer comprising:

 a programmer housing;
 an internal antenna mounted on a first circuit board within the programmer housing; and
 a display device mounted on a second circuit board within the programmer housing,
 wherein the first circuit board includes a substantially contiguous ground plane layer interrupted by a plurality of gaps.

Claim 2 (Previously Presented): The programmer of claim 1, wherein the gaps divide the ground plane layer into a plurality of interconnected conductive ground plane regions.

Claim 3 (Previously Presented): The programmer of claim 1, wherein the gaps divide adjacent ground plane regions to disrupt flow of eddy currents within the ground plane layer.

Claim 4 (Original): The programmer of claim 1, wherein each of the gaps extends outward from a central region of the ground plane layer.

Claim 5 (Original): The programmer of claim 1, wherein the first circuit board includes an electrostatic discharge layer defining a peripheral conductive layer and a central aperture.

Claim 6 (Original): The programmer of claim 5, wherein the internal antenna defines an aperture, and the central aperture of the electrostatic discharge layer substantially approximates a size and shape of the aperture of the antenna.

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Claim 7 (Original): The programmer of claim 5, wherein the electrostatic discharge layer is a first electrostatic discharge layer formed on a first side of the ground plane layer, the programmer further comprising a second electrostatic discharge layer formed on second side of the ground plane layer.

Claim 8 (Original): The programmer of claim 7, wherein the second electrostatic discharge layer defines a second central aperture that substantially approximates a size and shape of the central aperture of the first electrostatic discharge layer.

Claim 9 (Original): The programmer of claim 1, wherein the antenna comprises a loop-like antenna shape that defines an aperture.

Claim 10 (Previously Presented): The programmer of claim 1, further comprising a battery bay formed within an aperture of the antenna.

Claim 11-20 (Canceled).

Claim 21 (Previously Presented): The programmer of claim 1, wherein each of the gaps has a width in a range of approximately 0.2 to approximately 3.0 mm.

Claim 22 (Canceled).

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Claim 23 (Previously Presented): A programmer for an implantable medical device, the programmer comprising:

a programmer housing;

an internal antenna mounted on a first circuit board within the programmer housing, wherein the internal antenna has a loop-like structure and defines a first aperture, and the first circuit board includes at least one signal plane with an electrostatic discharge layer defining a second aperture in substantially overlapping alignment with the first aperture; and

a display device mounted on a second circuit board within the programmer housing,

wherein the first circuit board includes a substantially contiguous ground plane layer interrupted by a plurality of gaps.

Claim 24 (Previously Presented): The programmer of claim 23, wherein the gaps divide the ground plane layer into a plurality of interconnected conductive ground plane regions.

Claim 25 (Previously Presented): The programmer of claim 23, wherein the gaps divide adjacent ground plane regions to disrupt flow of eddy currents within the ground plane layer.

Claim 26 (Previously Presented): The programmer of claim 23, wherein each of the gaps extends outward from a central region of the ground plane layer.

Claim 27 (Previously Presented): The programmer of claim 23, wherein the electrostatic discharge layer substantially approximates a size and shape of the first aperture of the internal antenna.

Claim 28 (Previously Presented): The programmer of claim 23, wherein the electrostatic discharge layer is a first electrostatic discharge layer formed on a first side of the ground plane layer, the programmer further comprising a second electrostatic discharge layer formed on a second side of the ground plane layer.

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Claim 29 (Previously Presented): The programmer of claim 28, wherein the second electrostatic discharge layer defines a third aperture that substantially approximates a size and shape of the second aperture of the first electrostatic discharge layer.

Claim 30 (Previously Presented): The programmer of claim 23, further comprising a battery bay formed within the first aperture of the internal antenna.

Claim 31 (Previously Presented): The programmer of claim 23, wherein the first circuit board includes telemetry circuitry for communication with a medical device via the antenna.

Claim 32 (Previously Presented): The programmer of claim 23, wherein each of the gaps has a width in a range of approximately 0.2 to approximately 3.0 mm.

Claim 33 (Previously Presented): The programmer of claim 1, wherein the first circuit board and the second circuit board occupy different planes that are displaced from one another, wherein the internal antenna is mounted on a first side of the first circuit board, and the display device is mounted on a second side of the second circuit board facing away from the first circuit board.

Claim 34 (Previously Presented): The programmer of claim 23, wherein the first circuit board and the second circuit board occupy different planes that are displaced from one another, wherein the internal antenna is mounted on a first side of the first circuit board, and the display device is mounted on a second side of the second circuit board facing away from the first circuit board.

Claim 35 (New): The programmer of claim 1, wherein the programmer comprises analog electronics and digital electronics, wherein a first majority of the analog electronics is placed on the first circuit board and a second majority of the digital electronics is placed on the second circuit board.

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Claim 36 (New): The programmer of claim 23, wherein the programmer comprises analog electronics and digital electronics, wherein a first majority of the analog electronics is placed on the first circuit board and a second majority of the digital electronics is placed on the second circuit board.